

REMARKS:

In the office action dated October 15, 2003, the Examiner rejected the claims of the present application under 35 U.S.C. § 103(a), citing EP 457589 (hereinafter, EP '589).

In rejecting the claims of the present application, the Examiner relied on EP '589 as disclosing diesel fuel formulations low in nitrogen and sulfur content, with particular aromatic content and cetane indices. In contrast, the present invention discloses diesel fuel compositions and methods that are essentially free from an array of specific compounds, a feature neither taught nor disclosed in the EP '589 reference. It is respectfully submitted that neither the objectives, nor the compositions and methods, disclosed by EP '589 would render the present invention obvious to one skilled in the art.

The present invention does not claim low-sulfur or low-nitrogen formulations, but rather, discloses compositions and methods that are "essentially free" from a spectrum of heteroaromatic compounds, a group *not limited to* species containing sulfur and/or nitrogen. Some of these compounds are sulfur and/or nitrogen containing, but limitations on sulfur or nitrogen content *per se* are not proscribed. Additionally, the present application's specification and claims limit contributions from these elements to amounts less than 5 ppm overall. Further, the present application's specification distinguishes certain heteroaromatic compounds that are permissible in the invention, and have no deleterious effects. (see, ¶ [0022] of the present application). The present invention teaches particular limitations on additional elements, such as polyaromatics, that lead to targeted reductions in sedimentation and discoloration, with improved ignition quality and thermal stability. These limitations are neither taught nor disclosed in the EP '589 reference.

As recited in the specification of the present invention, the prior art discloses diesel fuel compositions utilizing combustion improvers, such as 2-ethylhexyl nitrate, while advocating reduced sulfur content. (see, ¶ [0003] of the present application) However, in the prior art, sulfur and nitrogen are reduced *in bulk* as one step in a strategy directed toward lowering emissions of particulates and pollutants while improving combustion. The present invention advances this concept by implementing additional limitations on certain *types* of compounds for improving diesel fuel's resilience and performance—an entirely different objective achieved by the elimination of compounds, rather than elements. Thus, the present invention refines the prior

art by achieving goals not previously contemplated, by specifically delineating a spectrum of compounds that is neither predictable, nor inherently practiced, in the prior art. The objectives of the present invention overcome obstacles neither contemplated nor defeated in the prior art.

Thus, one skilled in the art would not be likely to surmise from the EP'589 reference that eliminating or minimizing the presence of types of chemical compounds would reduce sedimentation or discoloration, but instead, would focus only on a means for reducing particulate emissions. The disclosure of EP '589 does not contemplate the goals of the present invention, nor did its practice of reducing sulfur or nitrogen in bulk achieve these goals. Practicing the formulations and methods of EP '589 would not *per se* lead to a reduction in sedimentation or discoloration with improvement in thermal stability of a diesel fuel. These goals are achieved through the implementation of the present invention, and would not have been obvious to one skilled in the field in view of the prior art.

It is respectfully submitted that for at least these reasons, the Examiner's rejections under 35 U.S.C. § 103(a) are hereby overcome and should be withdrawn.

It is respectfully requested that the Examiner now find the application in condition for allowance. Thank you for your attention to this matter, and please contact me at your convenience if you have any questions or require additional information.

Respectfully submitted,



Dennis H. Rainear
Reg. No. 32,486
Phone: (804) 788-5516
Fax: (804) 788-5519
Email: Dennis_Rainear@Ethyl.com